some slight degree to provide all that he might reasonably expect of it. Thus in speaking of mountain climates (p. 19), they are characterized as having "usually a greater frequency of rain and snow and, up to a certain altitude, more of it." To the reviewer, that is a disappointing sentence. It would have been so easy to say—and at no risk of cumbering the text with detail—, "up to altitudes, usually of some thousands of feet, which vary according to location, exposure and slope." To be sure, a concrete example is given on p. 181, but in the meantime much good might have been accomplished by intimating to the reader that this altitude is not fixed and by exciting his curiosity as to why it varies.

Again, one can not help seriously questioning the advisability of omitting climatological tables. To exclude them from the body of the text seems most wise, but not to present them at all seems, in view of the "smoothing" of nearly all the maps and graphs, unwise. This is generalization carried to the point of giving us a climatology without a climatological table. Though the splendid compilation of bibliographic material leaves no uncertainty as to where such tables may be found, nevertheless the reviewer feels that for the sake of those to whom such sources are not conveniently available, compact climatological tables should have been provided. For this is the one book which anyone interested either directly or indirectly in the climates of the United States will find indispensable—*the* source of information on this subject to own if one can have but one.

On a very few points the critical reader might be inclined to differ with the author's views in matters of interpretation. I think, for instance, that Ward's zeal in combating the fallacy which would ascribe to ocean currents powers over climate which they do not possess, results in failure to present some important aspects of the case. And is it quibbling to suggest that if "climate is most briefly defined as *average weather*" (p. 11), then the assertion (p. 21) that "an ocean current can have practically no influence on the climate of an adjacent land unless the wind is blowing on shore" is scarcely justifiable?

That Ward's book will find a wide and increasing field of usefulness is inevitable. Every teacher and student of climatology and geography will, of course, find in it a *sine qua non;* but so also will that great group of readers who, be they scientists or not, realize the value of extending their outlook beyond their more immediate concerns, in this case to an appreciation of the significance of climate in human affairs.—*Burton M. Varney.*

EXNER ON WORLD PRESSURE AND TEMPERATURE ANOMALIES; WAGNER ON A 16-YEAR PERIOD IN TEMPERATURE

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1836. *Monthly Pressure and Temperature Anomalies over the Earth. Correlation of Pressures of Iceland with other Places.* F. M. Exner. (Akad. Wiss. Wien, Ber. 133. 2a. No. 7–8. pp. 307–408, 1924.)—The present work forms an extension of earlier calculations [Abstract 605 (1914)] to cover a longer period, 1887–1916, and to cover the whole earth. Results have been obtained from 71 stations for pressure and 72 for temperature, mainly from year-books, but a quantity of hitherto unpublished information was used. Mostly results were available over the whole 30 years for each place, but in a few cases corrected results from neighboring stations were introduced. In parts of the Southern Hemispere and between the equator and 10° N. shorter series had to be employed. Over the whole series for pressure and temperature deviations from the mean were obtained for each month and for the year, the deviations being called anomalies. These results are set out by arranging the stations in belts of 10° of latitude. Charts give the geographical distribution of the pressure and temperature anomalies in February and August. In February pressure anomalies in the Northern Hemisphere are a maximum, but in the Southern Hemisphere a minimum, the reverse holding for August. Temperature anomalies for the Southern Hemisphere are greatest in August and least in February, the reverse holding for the Northern Hemisphere. The regions where pressure and temperature anomalies have their greatest values are called centers of action. The three most prominent of these regions are those where influxes of polar air are likely to occur, that is the northern part of the north Atlantic, northwest Asia, and the Behring Straits, the first of these being subdivided into the Icelandic and the Labrador regions. Finally, the pressure at Stykkisholm, Iceland, the place with the maximum pressure anomalies, is correlated with that at each of the other 70 stations for each month in the whole period and for the winter and summer half years, that is, October–March and April–September, these two latter being charted. A summary shows a large negative correlation in the region 30°–50° N. existing throughout the year, but generally in South latitudes the correlation is small. Further work is contemplated over the regions of zero correlation. An appendix gives the source of the information for each station and values of the pressure and temperature anomalies for each month and year of the series and also 30-year mean values for each month, the stations being arranged in alphabetical order.—*R. S. R.*

1841. *A Remarkable Sixteen-Yearly Climatic Period and Other Possible Periods.* A. Wagner. (Akad. Wiss. Wien, Ber. 133. 2a. No. 5–6. pp. 169–224, 1925.)—The author has first investigated the temperatures obtained at Vienna over the interval 1776–1919, and is able to confirm the existence of a period of 16 years for the temperature difference between the summer and the preceeding winter. The results are extended when examining a series of stations in middle and south Europe, but along a line Stykkisholm-Stockholm-Petrograd this period is lost. South of this line the phase is the same as that at Vienna, but north of the line it is reversed. The amplitude is a maximum in mid-Europe and decreases gradually north and south. Stations in mid-Europe and those in the north show the 16-yearly period in both summer and winter mean temperatures, but with opposite phases, and the winter amplitudes is about double the summer one. At the maximum of the period in middle and south Europe a severe winter and a warm summer occur, and these relations are reversed at the minimum. At mountain stations a larger amplitude is found than for a valley station in the same latitude. In an appendix, periods of 33.8, 3.5, and 3 years are investigated for the same series of observations. The Vienna periodograms confirm the existence of the 33.8 and 3 yearly periods for the same temperature difference as used above, but for other European stations it is less definite. In the region where the 16-yearly period is lost and its phase reversed, an 8-yearly period is very probable, but for other parts of Europe this period can not be detected with certainty.—*R. S. R.*